

to apply to any device pin.

An oscillator comprising R_2 , C_1 , and one HC132 gate feeds an HC393-based counter chain, which generates the pc-board-node addresses. D_1 through D_5 indicate the receive node's address. The HC688 identity comparator disables the circuit when the source and receive addresses are the same. In this case, the circuit is simply looking at identical nodes. When you turn

the CLR/RUN switch to RUN, the circuit begins counting and only stops when it finds a short or when it has checked all the nodes. This circuit handles 32 nodes, but you can test more nodes by expanding the circuit's addressing capability. **EDN**

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Two languages understand file

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The bilingual code in **Listing 1** eliminates the need to edit both the assembly and C code of mixed-language software systems when you change a constant in an "include" file. The syntax of this include file complies with the requirements of both languages. Therefore, you can include the file with either a C or assembly-language program.

Assembly-code parts appear as comments for the C

compiler, and C code appears as comments for the assembler. The **listing** encloses C code in <delimiter>...<delimiter>; assembly parts are between /* and */. ASCII character 96, " ", works well for the C delimiter because it has no special meaning for C compilers and is almost never used in C programs. You can use any character for the delimiter as long as it doesn't occur in your C code. **EDN**

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Listing 1—Bilingual include file

```
;/* this line is absolute comment
.XLIST
COMMENT ` <-- multi-line assembly comment begins here */

/*****
/*
/*          C part
/*
/*****
#define RXCHAR      (0x01)      /* received char */
#define LSTATUS     (0x02)      /* line status  */
#define MSTATUS     (0x04)      /* modem status */
#define EMPTY       (0xffff)

/*` <-- C comment begins and assembly comment ends here
;*****
;
;          ASSEMBLER PART
;*****
;
;          .LIST
RXCHAR      EQU      01H      ;RECEIVED CHARACTER
LSTATUS     EQU      02H      ;LINE STATUS
MSTATUS     EQU      04H      ;MODEM STATUS
EMPTY       EQU      0FFFFH
;*****
;
;          C comment ends here --> */
```